REMARKS

Claims 1-19 are pending in this application. By this amendment, claim 12 is amended. Reconsideration based on the above amendments and the following remarks is respectfully requested.

The courtesies extended to Applicant's representative by Examiners Rahimi and Coles at the personal interview held June 23, 2003 are appreciated. The substance of that interview is included herein per MPEP §713.04.

I. THE CLAIMS DEFINE ALLOWABLE SUBJECT MATTER

The Office Action rejects claims 1-5, 11, 18 and 19 under 35 U.S.C. §103(a) as unpatentable over U.S. Patent 5,729,351 to Oh in view of U.S. Patent 5,287,452 to Newman. This rejection is respectfully traversed.

Oh and Newman do not disclose "An apparatus that counts pixels in regions of interest within data present on a data bus, the data on the data bus including image data having active and inactive pixels, the apparatus comprising a pixel counter, coupled to the data bus, that selectively reads the image data from the data on the data bus and that generates a pixel count based on the active pixels of the image data," as recited in claims 1-11.

Oh discloses, "an apparatus and process for displaying the number of printed sheets of paper and the print ratio of the printed black pixels with respect to an overall area of a paper in conjunction with printing of images represented by the information," as recited in Oh, col. 1, lines 18-22. The Office Action asserts that Oh discloses an apparatus for counting pixels within data present on a data bus. However, as indicated in col. 6, lines 5-15 of Oh, a print control unit 211 stores print data corresponding to one page in a page memory area of a RAM 215. The print control unit 211 "counts the number of black pixels in the print data corresponding to one page stored in the page memory area at step 315," as recited in col. 6,

lines 9-11. Oh does not "count pixels in regions of interest within data present on a data bus," as recited in claims 1-11. Instead, Oh counts black pixels stored in a RAM 215.

Further, Oh does not disclose "data on the data bus including image data having active and inactive pixels," as recited in claims 1-19. Oh can not recognize active or inactive pixels on the data bus. Therefore, Oh cannot generate a pixel count based on the active pixels of the image data.

In addition, Applicant agrees that "Oh does not clearly disclose reading the image data selectively," as admitted in point 2 of the Office Action.

Newman discloses a display system for refreshing a display, comprising a display memory, a display and an interface, where the display memory stores image data. The interface receives image data and determines whether the received image data relates to stored image data in the display memory. Subsequently, the interface controls storage of the received image data in the display memory. More specifically, a bus control interface 112 monitors a line 15 of a bus 12 for addresses in a selected region of virtual space. When the bus control interface 112 detects a virtual address meeting certain criteria, the bus control interface 112 causes a data buffer 114 to latch onto the data lines 14. An address translator 204 translates the virtual address into a physical address to identify a storage location in the display memory 116 (RAM) for storing the data in the data buffer 114 (col. 4, lines 57-col. 5, line 14).

Newman does not disclose "a pixel counter, coupled to the data bus, that selectively reads the image data from the data on the data bus and that generates a pixel count based on the active pixels of the image data," as recited in claims 1-11. Further, Newman does not disclose "selectively reading,...image data on the data bus," and "generating, in the independent pixel counter, a pixel count based on the active bits of the read image data," as recited in claims 11-19.

In addition, one having ordinary skill in the art would not have been motivated to combine Newman's display system with Oh's printing apparatus. Oh's printing apparatus is directed toward (1) counting black pixels in the print data corresponding to one page; (2) determining print ratio of black pixels relative to overall bits and print data corresponding to one page; and (3) storing a current print ratio in a statistical memory to provide a cost effective way in which an individual consumable unit such as toner can be timely replaced at the end of its useful life. Newman's display system translates virtual addresses into physical addresses for storage of display data in the display memory 116 (RAM). One have ordinary skill in the art would not have been motivated to combine a display refreshing system (Newman) with a system for timely replacing individual consumable units such as toner (Oh). Moreover, even if Oh and Newman were combined, this combination does not teach or suggest a pixel counter selectively reading image data from the data bus and generating a pixel count based the active pixels of the image data.

The Office Action rejects claims 6-10, 12, 13 and 14-17 under 35 U.S.C. §103(a) as unpatentable over Oh in view of Newman and further in view of U.S. Patent 6,145,947 to Inora et al. (hereinafter "Inora"). This rejection is respectfully traversed.

The Office Action asserts, " Oh and Newman do not disclose the apparatus according to claim 1, wherein the image data is grouped into a scan line, the scan line comprising at least one row of pixels extending across an image ... ."

Inora discloses an ink consumption detection system in which a printer controller 103 reads an ink consumption counter from a memory 114 and adds print count values to the ink consumption counter to produce an updated ink consumption counter, which is stored in memory. Although Figure 6 shows print image data indicating ejection or non-ejection nozzles (col. 5, lines 19-46), one having ordinary skill in the art would not have been motivated to combine the ejection/non-ejection print image data of Figure 6 of Inora with the

black pixel counter of Oh and the bus caching computer display system of Newman. Even if these references were combined, these references do not disclose "a pixel counter, coupled to the data bus, that selectively reads the image data from the data on the data bus and that generates a pixel count based on the active pixels of the image data," as recited in claims 1-11, and "selectively reading,...image data on the data bus," as recited in claims 12-19.

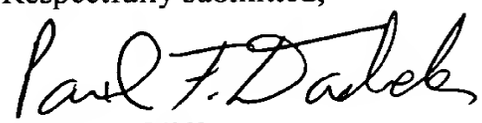
For at least these reasons, it respectfully submitted that claims 1-19 are distinguishable over the applied art for at least the reasons discussed above.

II. CONCLUSION

For at least these reasons, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-19 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in better condition for allowance, the Examiner is invited to contact Applicant's undersigned representative at the telephone number listed below.

Respectfully submitted,



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